Chapter 1
Introduction: Transition Challenges and Pathways to Sustainable Community Systems: Design and Systems Perspectives

Amar K. J. R. Nayak

Abstract This chapter provides a background to the various dimensions of sustainability that we understand as the critical pillars of sustainability for any community system. Based on these five key dimensions, the contributions in this book have been categorised into five broad sections. This chapter discusses these five critical dimensions – relationships, institutions, production, organisation and governance – from design and systems perspectives for the sustainability of any community system. Under each dimension, critical factors are presented as a spectrum; where characteristics of each factor at one end of the spectrum tend to create locking-in effects, control by a few, inequity and unsustainability in the long run, while at the other end characteristics of the same factors facilitate equity, freedom and sustainability. With reference to characteristic of each factor, the chapter inherently argues that design for sustainability needs to be anchored on the natural principles of interconnections and interdependence.

Discussions in the chapter uncover that although sustainability appears to be fuzzy, blurred and impossible; making our communities and society sustainable is within our collective choices in the way we choose the direction of each of these factors under the five critical dimensions. Figures 1.1 and 1.2 of this chapter summarise the critical dimensions and the spectrum of each of the twenty-five factors. In the final analysis, this chapter implies that if people in small communities and various external stakeholders, including government officials, development and corporate executives, recognise the current design flaws and simultaneously make efforts to unlock themselves from the various lock-in effects, our transition to sustainability will be easily achievable.

Keywords Transition strategies · Sustainable communities · Relationships Institutions · Production · Organisation · Governance · Design Systems science

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1.1 Background

While the intentions in many of our initiatives towards sustainability have been noble; inconsistencies between the intent and approaches, methods, tools, techniques and actions often make these initiatives unsustainable over time. The inherent inconsistencies and tensions in the designs, and lack of synergy across different sub-systems – even in small communities – perpetuate lock-in effects, path dependencies and greater external control than freedom, leading to inequity and unsustainability.

The chapter has five parts: *First*, it discusses the basic postulate underlying the design and systems perspective in terms of the nature and state of relationships in society. *Second*, it presents the rationale behind the choice of the five major dimensions of sustainability around which this chapter has been structured. *Third*, it discusses the factors within each dimension, the spectrum of each factor, inherent tension within the spectrum of each factor, dynamics of relationships and lock-in processes within a dimension and across the dimensions. *Fourth*, it proposes a potential narrow but simple path to unlock sustainability. *Fifth*, it indicates the potential areas of research to understand sustainability better from design and systems perspectives.

First, with regard to the basic premises underlying the design and systems perspectives in terms of the nature and state of relationships in society, there are indeed deep interconnections and a high degree of interdependence between nature and our society. One can look at the workings of a clock to understand the interconnections and interdependence. The connection between the second, minute and hour hands can indicate the nature of interconnections, but the reality could be much more complex. Interconnected gears in a machine can illustrate it a little better. However, the interconnections that actually occur in society across time and space appear to be much deeper and more complex. Deep interconnections and interdependence in natural systems and the web of human life need to be accordingly considered in our new designs from a systems perspective.

There have been a number of studies that suggest there are growing economic inequalities between people across the world, weakening their socio-economic-political relationships. Piketty (2014) shows that global income inequality has increased in the last hundred and ninety years or so, and that the *Gini coefficient* has been increasing during this period. Income inequality in the emerging countries has been growing much faster in recent decades. For instance, in India, income inequality was lower during the 1950s to 1980s, when it was a social economy. Subsequent to the 1980s, when it started liberalising, inequality in terms of the *Gini coefficient* has been rising steadily. Further, wealth inequalities across countries have been much greater than income inequalities. We often categorise these phenomena as development paradoxes. Should we not discover why this happens and what causes these increases in inequalities; factors of unsustainability?

These inequalities do not seem to be only a phenomenon of the last two hundred years. Rousseau (1762) wrote about the inequalities over three hundred years ago. In his book, *The Social Contract*, Rousseau wrote: "Man is born free and everywhere he is in chains. One man thinks himself the master of others but remains more of a slave than they are." Income and material inequality has been a constant source of fear and loss of control. As far back as four thousand years, *Chakra Vyuha* and *Labyrinths* from across the world show the symbols of fear and loss of control by the common man. Today's control mechanisms may not just be physical or material controls, but could also entail psychological and mental control of the individual by market forces.

Globally, the seventeen noble goals specified in the Sustainable Development Goals 2030 of the United Nations and ratified by the nation states were formulated to transform the world. However, in the current state of increasingly unequal relationships in our communities, nations and society at large, can these goals be achieved?

The significance of relationships for the sustainability of our communities is expressed in the working definition of sustainability:

> Sustainability is a dynamic state of deep relationships among the people and all the constituents both living and non-living within a micro ecological unit that strongly values the acts of sacrifice, reciprocity and love for each other; where the priority is to strengthen the weakest, and the spirit of high internal competition with high external co-operation not only drives its own ecological unit to peace, joy and happiness but also inspires other micro ecological units for such deeper inter relationships (Nayak 2011: p. 117).

In our analysis, relationships are studied from the systems science perspective and spirituality (including philosophical and theological) perspective. Further, relationships are core to all other dimensions of study: institutions (both formal and informal) at different levels of our society, production systems (with specific reference to sustainable agricultural systems), organisations (including producer organisations), and governance (with special reference to grass-root-level community governance).

Second is the rationale behind the dimensions and factors, the boundaries in terms of design thinking and systems perspectives. These have evolved during the last two decades through the various deductive and inductive studies, engaging action research with rural agricultural communities and involvement in policy formulation. They strongly present a compelling need to understand the lock-in mechanisms of our designs and systems within and across these five dimensions.

Although our research and action research have largely focused on production in the primary sector – namely the agricultural sector and the organisational design of *farmer producer organisations* (FPOs) as community enterprise systems – the issues of institutions and community governance have been critical to the sustainability of the first two dimensions. Further, the factors of social capital, trust and co-operation have been fundamental to the sustainability at all these levels. Accordingly, five dimensions – addressing Relationships (I), Institutions (II),

Production (III), Organisation (IV) and Governance (V) – have been chosen for analysis and discussion.

A community system not only consists of a certain number of families in a cluster of villages but also a certain extent of geographical spread with its ecosystem. Accordingly, a micro-watershed, the basic unit of ecology, forms the technical base of our community system. However for optimisation of size for economic viability (especially under a diverse production system), and easier identification of physical boundaries which affect the people, a *Gram Panchayat* (GP), or Ward that may consist of two to four micro-watersheds depending on whether it is in a hilly, plain or coastal region, has been used as a community system for the analysis.

Interestingly, countries across the world are structured according to similar primary boundaries of their respective local communities; examples include the Gewog in Bhutan, the Parishad Council in Bangladesh, the Grama Niladari in Sri Lanka, and the Union Council in Pakistan. Countries of Africa have a similar political/administrative governance structure. For instance, Tanzania has Ward at the lowest level and District/Municipality at the next upper level. The United Kingdom does not have such structures but has the traditional, informal institutional structure of Parish at the lowest level of community organisations. Advanced industrial economies usually have Ward at the lowest level and District at the higher level. In other words, as small community systems exist in countries around the world, it would be prudent to facilitate holistic sustainability initiatives in such small communities in the respective nations to attain the gradual but overall sustainability of a nation.

Third relates to the factors within each dimension, the spectrum of factors in each dimension, tensions within the spectrum, dynamics of relationships among factors within a dimension and lock-in processes. Figure 1.1 shows a list of the factors within different dimensions. Interestingly, it also shows the order of layering, from core to periphery and high interdependence among these five different dimensions.

Each of the five critical dimensions of a sustainable community system is being studied from a few specific factors. The key factors in each of the five dimensions are discussed briefly in this section.

1.1.1 Relationships

The nature and state of relationships often shape the sustainability of our endeavours in institutions, production systems, organisations and community governance. Indeed, relationships seem to have been at the core of human engagements and our endeavours towards sustainability. We explore such relationships from the systems science and spirituality perspectives.

From a systems science perspective, we deliberate on the notions of *interdependence* and identifying self with others around us, and on the notions of *capital*

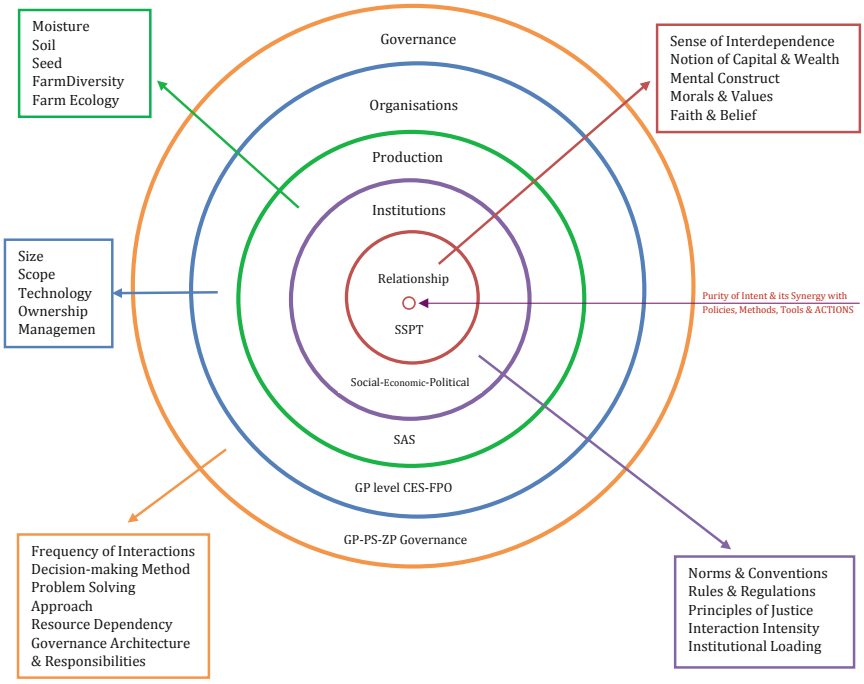

Fig. 1.1 Transition strategies for sustainable community systems. *Source* The author, 28 October 2016; www.xub.edu.in/NABARD-Chair/activites.html

and wealth. The spirituality perspective has been discussed through philosophical and theological lenses. The broad factors have been interpreted in terms of the *morals and values* and deep-rooted *faith and beliefs* that probably shape our behaviour, and actions that are either in sync with or contrary to the principles of sustainability. The factor *mental construct* has been studied from both a systems science perspective and a spirituality perspective.

1.1.2 Institutions

The nature and type of institutions at the district, state, national and global levels can either facilitate or destroy sustainable principles adopted in the other four inner layers, namely, community governance, production organisation, production systems, and culture of relationships at the core. Even if there are inconsistencies in the institutions at the higher levels from district to global level, coherence of institutions within a district that is at district, block or GP-Ward level can greatly facilitate sustainability at the other four inner layers – Gram Panchayat (GP), FPOs, Production Systems and Relationships. Accordingly, analysis in this dimension

includes five key factors of institutions – *norms and conventions, rules and regulations, principles of justice, interaction intensity,* and *institutional loadings* – such that external institutions facilitate communitarian principles at lower levels of governance.

1.1.3 Production

While production would often include primary, secondary and tertiary sectors, we have just used agricultural production in the primary sector for our analysis. Agriculture is greatly being impacted by climate changes and is increasingly becoming unsustainable across the world. It appears that in the course of taking agriculture forward for greater productivity through intensive external inputs, we have made agriculture unsustainable by making small farmers unviable, increased risks to food safety, and accelerated environmental degradation through our current industrial production methods of agriculture.

Agricultural production science could holistically adopt the principles of *seed, soil, moisture, diversity and ecology* in line with the principles of agroecology that can enable a small farmer's agricultural field to become sustainable and the farmer viable in the short term and sustainable in the long term. Against this backdrop, transition strategies related to the above principles need to be explored with regard to agricultural research, practices, ecosystem services, and policies. Similarly, it is imperative for secondary and tertiary sectors to align themselves more closely with natural principles, as in the primary sector of agricultural production.

1.1.4 Organisations

Organisations have been the key engines of economic growth in the history of human enterprise systems. However, today's organisational designs seem to greatly facilitate private financial capital creation rather than social wealth creation for the whole of society. In the primary sector, although *Farmer Producer Organisations* (FPOs) are initiated on the principles of social capital formation, they gradually seem to adopt the design of organisations for private wealth creation. Therefore there is a need to redesign FPOs so that they can evolve into community enterprise systems rather than private enterprises. FPO for our analysis includes different forms of collectives: primary co-operatives, *Self Help Groups* (SHGs), farmers' clubs, producer organisations, and producer companies.

Accordingly, organisational design factors that can facilitate a higher frequency of interactions among the members/owners, a greater number of transactions throughout the year, and help members find greater value through these interactions and transactions need further exploration. The design is to facilitate not only financial capital in the short term but also greater social capital formation in the long

run that can ensure a sustainable wealth creation process. The key design factors include *size, scope, technology, ownership* and *management.* Size refers to the number of members and geographical extent. Scope refers to the number and type of activities that an FPO can engage in. Technology refers to the processes and product technology suitable for an FPO. Ownership refers to the shareholding structure of the FPO, and Management refers to the management structure and type of managerial skills appropriate for an FPO.

1.1.5 Governance

The community in our analysis consists of a Gram Panchayat or a Ward. This has been chosen for analysis based on the technicality of the watershed, economic viability (keeping diversity as the basis of production), and the existence of a politically and socially recognisable boundary.

The analysis here includes key factors, namely, *frequency of interactions, decision-making method, problem-solving approach, resource dependency*, and *governance architecture and responsibilities.* While the desirable direction of each of these factors may be readily understood, the studies need to figure out ways to overcome the challenges of community governance that can facilitate sustainability in community enterprise systems, sustainable agricultural systems, and deepen relationships among members within the community. Figure 1.2 provides the broad spectrum of each of the factors within the different dimensions.

1.2 Discussions

The issues that are most interesting to explore are the spectrums of each factor within the different dimensions and the inherent tensions within the spectrum of each factor. Figure 1.2 provides the list of factors and presents the extreme positions possible in the spectrum of each factor. The inherent tension in each spectrum of a factor comes out clearly in the process. From a transition strategy point of view, the possible intermediate positions that lie between the two extremes of the spectrum can be discerned.

Further, the characteristics of factors within each dimension seem to show a dynamic relationship with each other. As an illustration, let us see how the five factors of organisational design – size, scope, technology, ownership and management – are dynamically interconnected with each other in the specific case of, say, a farmer producer organisation (a co-operative or producer company).

As we increase the organisational size in terms of membership and geographic spread, the scope of activities in the organisation tends to become limited. In other words, as the size increases, the organisation tends to become specialised. As it becomes more specialised, it can't help but rely more on technology, which leads to

Relationships (Systems Science and Spirituality)		
Low (Distrust, Competition, Rivalry, and Contractual)	Sense of Interdependence	High (Trust, Co-operation, Friendly and Non-Contractual)
Financial Capital and Material Wealth	Notion of Capital and Wealth	Social Capital and Social Wealth
Scarcity, Fear and Inequity	Mental Construct	Plenty, Fearless and Equity
Regulating Others and Concern for Strongest	Morals and Values	Self-Regulation and Concern for Weakest
Hierarchical and Asymmetric	Faith and Belief	Non-hierarchical and Symmetric
Institutions (Social-Economic-political)		
Universal	Norms and Conventions	Contextual
Contextual	Rules and Regulations	Universal
Instrumental & Delayed	Principles of Justice	Fairness &Timely
Shallow	Interaction Intensity	Deep
Heavy	Institutional Loading	Light
Production (Sustainable Agricultural System)		
External	Moisture	In-Situ
Dead	Soil	Live
Exotic	Seed	Indigenous
Low	Farm Diversity	High
Shallow	Farm Ecology	Deep
Organisations (CES–FPOs at GP Level)		
Large	Size	Small
Few	Scope	Multiple
High Cost	Technology	Low-cost
Private	Ownership	Common
Complex	Management	Simple
Governance (Ward/GP-Panchayat Samiti-Zilla Parishad)		
Low	Frequency of Interactions	High
Indirect Participation (of elite groups)	Decision-making Method	Direct Participation (of diverse groups)
Positivism	Problem-solving Approach	Constructivism
External	Resource Dependency	Internal
Unbounded	Governance Architecture and Responsibilities	Bounded

Fig. 1.2 Spectrum of dimensions and factors for optimising internal designs and systems consistency. *Source* Nayak (2017)

subsequent technology intensification in the organisation. This process and product technology intensification doesn't come free to the organisation, but requires huge investment. These investments are brought in by some investors who would like to take an ownership position in the organisation, either directly or indirectly through greater management control. With more capital inflow to the firm, the ownership and management structure gradually gets modified, often in favour of major investors or owners. As all the four factors shift towards one side of the spectrum (to the far left, as in the table) – that is, size increases, specialisation increases, technology intensifies, and ownership-management becomes concentrated – the producer organisation is obliged to adopt a very complex management structure to reduce transaction costs. Interestingly, these interconnected changes could be initiated by a change in any one of these five factors; a process or product technology intensification, for instance, can lead to a subsequent shift towards specialisation, and so on.

When the size grows, specialisation increases, technology intensifies, ownership-management gets concentrated and management becomes complex, an organisation would often evolve into a large multinational corporation. Unfortunately, large corporations seem to show signs of unsustainability in the future. Several historical research studies (Schumpeter 1943; Vernon 1971, 1977, 2009; Nayak 2009) on large multinational corporations around the world tend to make this point. Is the recent bankruptcy of Fagor, the flagship unit of Mondragon Co-operative Group, the result of such dynamics? Are the internal tensions in India's best co-operative, AMUL, due to design flaws? Would this lens of analysis be useful to understand and resolve the challenges of large corporations in the global economy?

Conversely, when all these factor positions are at the other end of the spectrum (to the far right, as in Fig. 1.2), we get small informal organisations, such as self-help groups (SHGs) or small primary co-operatives in India. While SHGs groups have been good social units among economically poor women, they do not seem to be technically viable to undertake more than a few limited functions. So it appears that one of the challenges in the drive to achieve sustainability of producer organisations has been to find the optimal positions of the design factors. Small is beautiful (Schumacher 1973) indeed; however, in the current challenging context, what would be the optimal organisational size to facilitate transition towards a sustainable community system?

It may also be interesting to see the inter-industry dynamics across organisations in primary-secondary-tertiary sectors. Greater volume of production of a crop in a given geography or collection by a producer organisation, which may be initiated by itself or triggered from outside, often requires processing or manufacturing activity that gradually leads to more technology dependency, first on process technologies, then on product technologies. The increased transaction cost due to larger operation is then dealt with by further scaling-up processes. With scaled-up production capacity, a higher price-signalling mechanism is often used to source inputs by the processing or manufacturing units in the secondary sector, which initially comes as a boon in terms of higher prices to farmers, but gradually

becomes a bane to the small producers in the primary sector, as observed in commercial farming across the world.

With greater demand to deal with the complexities in the secondary sector, the tertiary sector flourishes in terms of global trade investments and all supporting services, including education and training in various fields, such as technical, management, economics, and diplomacy, that are often path-dependent on the existing organisations. In the given context, the criteria for efficiency are different for individuals/organisations in different sectors. For instance, diversity is efficient for farmers, specialisation is efficient for processing/manufacturing units, and scale and scope are required for retail organisations. With such technical contradictions across sectors, while pursuing their individual goals, they together perpetuate greater asymmetries across the primary-secondary-tertiary sectors in an economy (Nayak 2018), the long-term impacts of which seem to play out more clearly in highly industrialised economies.

Organisation has been perceived as the engine of growth in the present market economy and, accordingly, governance and institutions – the other critical layers of a society – increasingly appear to get shaped by the demands of the leading organisations. Inherent design deficiencies in such organisations can fuel further asymmetries, more unequal relationships, deeper division among people and perpetuate the vicious cycle of unsustainability in society.

The above brief analysis of very complex dynamics indicates that the factors within a dimension are interdependent and hence influence each other in a manner which drives not only its own dimension (say organisation) but also the other four dimensions in a particular direction. Analysis of the factors of each dimension individually reveals a similar dynamic relationship within and outside.

For instance, the factors of agricultural production – moisture, soil, seed, diversity, and ecology – are deeply interconnected. On the one hand, sustainable agricultural systems thrive and grow under deep ecology and high diversity of crops, horticulture and farm animals. With abundant foliage and the soil not being exposed to direct sunlight due to deeper ecology on the farm, the water requirement of the farm is reduced. Rainwater run-off is slowed down and soil erosion is reduced. Under these conditions, the soil is richer with organic life that enhances the soil health and there is no need for inorganic fertilizers for the soil. Harmful pests on such diversified farms have been observed to be low. Genetically stable indigenous seeds, carefully selected by the farmer when planted on such a farm, provide very high yields.

On the other hand, single crop production in a season with little farm diversification requires high-yielding seeds, such as genetically-modified seeds, large amounts of inorganic fertilizers, and a large amount of water. Farm ecology is not much of a concern on such a farm. The system of operation for such a farm becomes complex over time and, more importantly, the net income of the farmer remains more uncertain.

What is, however, important for our analysis here is that if a farmer were to adopt one of the production factors of any of the above two paradigms on a farm, she/he has to gradually adopt the other associated factors over time. The specialised

industrial production and centralised governance-market system often push farmers towards a high external input intensive mono-cropping agricultural system.

The factors of community governance are also deeply interconnected. Although it is desirable for local communities to self-govern themselves, the positivist problem-solving approach at the higher level of governance in a State drives the system towards centralised governance. The positivist orientation typically relies on professionals over volunteers for achieving efficiency in public service delivery. While this orientation and these principles and methods fit better with centralised decision-making, they gradually reduce the direct participation of people in the community. With lesser people's participation and ownership by the people in local governance, issues of transparency and accountability arise. The idea of a community, its culture, heritage, social wealth and common pool resources erodes, gradually leading to increasing costs and the failure of the governance system.

The factors of institutions are equally deeply interconnected. The large size of a State and its commensurately large budget would logically lead it to divide its responsibilities between separate departments and functions. Accordingly, the policy signals of the state institutions for regulatory and administrative mechanisms tend to become compartmental in nature.

The overall development approach of such a state is dispersed rather than saturation. With resource constraints which make it difficult to meet all the requirements of the various constituencies of the population, the government is forced to design specialised programmes and schemes. Further, to be perceived positively by the general public across constituencies, the government often implements these schemes in a dispersed manner rather than in the holistic manner that is technically required for resolving the various issues of people in a given small community.

The compatible institutional architecture to execute the policies to achieve the targets of each ministry or state department accordingly requires a top-down hierarchical institutional architecture that is largely market-determined rather than bottom-up community-driven. The institutional architecture arising out of these compulsions serves more as a delivery agency of public services; and the institutional cost of providing services can only increase over time, placing a greater fiscal burden on any government in power.

With the above policy signal, developmental approach and institutional architecture of the State, the institutional support will tend to become piecemeal rather than being holistic. The input-output market network in a given community will also adopt a borderless loose market network that is in line with the overall competitive market economy framework.

In other words, the institutions evolve and consolidate with policy signals that are compartmental rather than convergent in nature, the development approach being dispersed rather saturation, the institutional architecture being top-down and market-determined rather than bottom-up community-driven, institutional support being piecemeal rather than holistic, and input-output networks being borderless loose market networks rather than deep local market networks.

However, taking a bottom-up view of institutions may be more universal in nature, in line with sustainability principles. Accordingly, the key factors of

institutions include norms and conventions, rules and regulations, principles of justice, interaction intensity, and institutional loadings (Nayak 2018).

The dimension of relationships appears to have been at the core of the other four dimensions – institutions, production, organisations, and governance – mentioned earlier. The factors of relationships are deeply interconnected and often the most challenging to change. We explore the dimension of relationships from a systems science perspective and a spirituality perspective. The spirituality perspective can be further analysed from the perspectives of theology (religious studies) and philosophy. The five broad factors of the relationship dimension address relationships at different levels. Faith and belief are at the core of an individual. Morals and values are an outcome of relationships at family level. Mental constructs are an outcome of our education, training and experience. Sense of interdependence is an outcome of the relationship with neighbours and one's small community. The notion of capital and wealth is the overall societal orientation towards what is perceived as capital and wealth.

Depending on the faith and belief system, a person may be rooted in hierarchical and asymmetric beliefs at the core or otherwise. Accordingly, morals and values may be directed at regulating others and inherently favour the strongest, or may be otherwise. Mental constructs that are not only developed through upbringing but more through education, training and work experience could shape thinking in terms of scarcity, fear and inequity versus feelings of plenty, fearlessness and equity. If the sense of interdependence is low for a person, he/she is likely to have a feeling of distrust, competition and hate, and if the sense of interdependence is high, he/she is likely to exhibit trust, co-operation and love in the local community. Depending on a person's notion of capital and wealth, an individual may see them in terms of financial capital and material wealth versus social capital and social wealth.

If all twenty-five factors of the five dimensions were to be simultaneously considered; the positions of these factors may be spread widely across their respective spectrums. Such a spread has been the cause of the complex control mechanisms and lock-in systems and processes of our present time; a context where apparently no single individual, organisation or institution can possibly reverse the vicious cycle of unsustainability. If most factor positions are to the left of their respective spectrums, societal collapse would be imminent. However, if most of the factor positions are towards the right, it is possible to move a few factors from far left to right, making small communities transit towards sustainability. As more small communities transit towards sustainability, this could gradually lead the larger society towards sustainability.

Fourth, under the above highly interconnected complex dynamics, where our own designs and systems at different levels appear to perpetuate lock-in effects and external control, the chances of our becoming unsustainable seem to be far greater than becoming sustainable. Under these circumstances, what could be the way forward to transit to sustainability?

One of the steps could be to review our designs at each level of institutions, production, organisation and governance, and reflect on the core of all these dimensions – our culture of relationships. While it will be hard to remove all

inconsistencies at one go; being aware of these inconsistencies and sharing this knowledge with others could be a starting point. *Two*, ensure that the design of each sub-system is based on the principle of interconnections and interrelationships. *Three*, identify factor positions in each dimension that are consistent with sustainability principles. It may be noted here that following sustainability principles at the core – that is to say, relationships – can have a healing effect at higher levels of engagement, and following sustainability principles at higher levels – i.e. governance – can facilitate sustainability at the lower levels of engagement. *Four*, facilitate synergy of factor positions across all five dimensions in relatively simpler community systems where the present lock-in effects are relatively low (Nayak 2014).

While these steps may be considered only as initial starting points, developing details that are context-specific needs greater deliberation, and engaged action research into different dimensions with the stakeholders in a given community and context will help the cause of sustainability.

Fifth, on research possibilities in the domain of sustainable community systems, the field appears to have been largely unexplored and neglected. Therefore, it presents a huge opportunity – or rather presents a crying need – to study and facilitate the transition process in both practice and policy. Indeed, there is no dearth of studies relating to individual dimensions – i.e. relationships, agricultural production systems, organisational design, governance and institutions. However, most of these studies have broadly followed the reductionist approach of science and hence do not seem to have taken a systems view, either within the dimensions or across these dimensions.

Further, past studies relating to factors in each of the above dimensions has often been limited to studying these factor positions at one end of the spectrum, leaving out the multitude of alternatives. In other words, the language, logic and values of analysis have largely been limited to the perspective of competition or a hybrid of competition and co-operation rather than exploring sustainability from the perspective of co-operation (Nayak 2014).

This chapter, based on nearly two decades of research, proposes only twenty-five core factors for study and deliberation. However, there seem to be a much larger number of sub-factors and possible combinations of these factors and sub-factors under different contexts that need to be studied to facilitate the process of transition to sustainability across communities.

The methodologies of research to explore alternatives for sustainability are likely to be different from the current methodologies of research and inquiry. Empiricism may not provide clues to sustainability, as in the present reality most practices and policies do not seem to be internally consistent with sustainability principles. Interdisciplinary research, systems thinking, action research and holistic implementation processes could be some potential ways to explore new alternatives towards successful transition processes.

The present volume is an effort to stitch together the various efforts and initiatives towards sustainability from the design and systems framework towards facilitating sustainable communities in different contexts, regions and countries across the world.

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